ION PUBLISHED UNDER THE PATENT COOP



(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 16 December 2004 (16.12.2004)

PCT

(10) International Publication Number WO 2004/108648 A1

(51) International Patent Classification⁷:

C07C 51/00

[KR/KR]; Songgang Green Apt. 317-1305, Songgang-dong 199, Yuseong-gu, Daejeon 305-751 (KR).

kind of national protection available): AE, AG, AL, AM,

(21) International Application Number:

PCT/KR2004/001350

(74) Agent: CHO, In-Jae; 3rd Fl., Janghyun Bldg., 637-23, Yeoksam-dong, Gangnam-gu, Seoul 135-909 (KR).

(81) Designated States (unless otherwise indicated, for every

(22) International Filing Date:

4 June 2004 (04.06.2004)

(25) Filing Language:

Korean

(26) Publication Language:

English

(30) Priority Data: 10-2003-0036352

5 June 2003 (05.06.2003) KR AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(71) Applicant (for all designated States except US): LG CHEM. LTD. [KR/KR]; LG Twin Tower, East Tower 20, Yeouido-dong, Yeongdeungpo-gu, Seoul 150-721 (KR).

(72) Inventors; and

VLEE, Sang-gi (75) Inventors/Applicants (for US only): 105-1203, Jeon-[KR/KR]; Samsung Pureun Apt. min-dong, Yuseong-gu, Daejeon 305-727 (KR) MOON, Ji-joong [KR/KR]; LG Apt., 8-409, Doryong-dong 381-42, Yuseong-gu, Daejeon 305-340 (KR). REW, 111-1003, Dae-sun [KR/KR]; Sejong Apt. Jeonmin-dong, Yuseong-gu, Daejeon 305-728 (KR) KO, Dong-hyun [KR/KR]; Gyosu Apt. 14-301, Gajeong-dong, Yuseong-gu, Daejeon 305-350 (KR) FOM, Sung-shik (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR PREPARING ORGANIC ACID

(57) Abstract: Provided is a method for producing an organic acid, which includes: mixing a compound containing one or two aldehyde groups and a solvent to obtain a reaction mixture; and maintaining the reaction mixture in a liquid phase in the presence of pure oxygen or O2-enriched air containing 25-90 % oxygen at a temperature of a 0-70 °C, under a pressure condition of an atmospheric pressure to 10kg/cm², and for 2-10 hours. The method can enhance the selectivity of the organic acid, thereby increasing the yield of the organic acid.

A. CLASSIFICATION OF SUBJECT MATTER

IPC7 C07C 51/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7 C07C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Korean patents and applications for the inventions since 1975

Electronic data base consulted during the intertnational search (name of data base and, where practicable, search terms used) CA

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.	
х	US 5686638 A (DSM Chemie Limz GmbH) 11 November 1997 see column 1, the table in column 5	1-5	
A	US 4273936 A (Union Carbide Corporation) 16 June 1981 see abstract		
A	US 5237092 A (Mitsubisi Gas Chemical Company, Inc.) 17 August 1993 see abstract		
A	WO 03/008367 A2 (Novartis AG) 30 January 2003 see abstract		

-	Further	documents	are listed	in t	he continuatio	in of Box C.
- 1						

X See patent family annex.

- Special categories of cited documents:
- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier application or patent but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other
- "P" document published prior to the international filing date but later than the priority date claimed
- "T" later document published after the international filing date or priority
 date and not in conflict with the application but cited to understand
 the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- "&" document member of the same patent family

Date of the actual completion of the international search

17 SEPTEMBER 2004 (17.09.2004)

Date of mailing of the international search report

22 SEPTEMBER 2004 (22.09.2004)

Name and mailing address of the ISA/KR



Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

LEE, Choong Jae

Telephone No. 82-42-481-5536



INTERNATIONAL SEARCH REPORT

Information on partial mily members

International application No.
P(2004/001350

Patent document cited in search report	Publication date	Patent family member(s)	Publication date			
US5686638A	11.11.1997	AT170194A AT402293B BR9503935A CA2157544A1 CZ9502284A3 DE5950542301 EP0700892A1 ES2128622T3 HU73016A2 JP8193044A US5686638A	15.08.1996 25.03.1997 17.09.1996 07.03.1996 16.06.1999 29.04.1999 13.03.1996 16.05.1999 28.06.1996 30.07.1996 11.11.1997			
US4273936A	16.06.1981	CA1182127A1 EP0026998A1 US4273936A	05.02.1985 15.04.1981 16.06.1981			
US5237092A	17.08.1993	DE69201756D1 DE69201756T2 EP0520762A2 JP5065244A	27.04.1995 03.08.1995 30.12.1992 19.03.1993			
W003/008368A2	30.01.2003	US6740776B	25.05.2004			